UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/741,957	12/20/2000	Phil Delurgio	DEM1P004	7258

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EXAMINER
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ART UNIT	PAPER NUMBER
3696	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

		Application No.	Applicant(s)
Office Action Summary		09/741,957	DELURGIO ET AL.
		Examiner	Art Unit	
		Ella Colbert	3696	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>12 December 2007</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>3,4,6 and 11-20</u> is/are pending in the application.

    4a) Of the above claim(s) <u>1,2,5 and 7-10</u> is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>3, 4, 6, and 11-20</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>2/24/08</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-20 are pending. Group II, claims 3-20 were elected and claims 1, 2, 5

and 7-10 have been withdrawn without traverse or prejudice or disclaimer in response

to the Election/Restriction filed 12/12/07. Claims 3, 4, 6, and 11-20 will be examined on

the merits.

2.   The IDS filed 2/24/08 has been considered and entered.

Claim Objections

        Claims 12 and 13 are objected to because of the following informalities: Claim

12 recites "…, wherein said cost model models costs for each of the at least one

merchandise store". This claim limitation would be better recited as "…, wherein the

cost model models costs for at least one merchandise store". Claim 13 has a similar

problem. Appropriate correction is required.

Claim Rejections - 35 USC § 112

        The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention.

        Claims 3, 4, 6, and 11-20 are rejected under 35 U.S.C. 112, first paragraph, as

failing to comply with the enablement requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to enable one skilled in

the art to which it pertains, or with which it is most nearly connected, to make and/or use

the invention. There is a lack of structure in independent claim 3. The econometric

engine and the financial engine are interpreted as being two software modules. The

Specification, drawings, and claims tells what an econometric engine and a financial

engine does but not what an econometric engine and financial engine is. It is unclear

as to whether they are software modules or some type software application or a piece of

software. Claims 15-17 have a "coefficient estimator" which is unclear as to what it is

that performs the functions in these claim limitations. The claim limitations tell what it

does but not what it is. Is the "coefficient estimator" a user or a piece of software or a

mathematical algorithm or a device that performs these functions?

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over

(US 6,341,269) Dulaney et al, hereafter Dulaney and Official Notice.

Claim 3.   Dulaney discloses, An apparatus for modeling costs, useful in association

with an optimization engine and at least one merchandise store coupled to the

apparatus via a network, wherein the at least one merchandise store includes at least

one brick-and-mortar store, an online store, and a catalog store, and wherein the

optimization engine is configured to receive input from the apparatus, and wherein the

optimization engine is further configured to generate a preferred set of prices, the

apparatus comprising: an econometric engine for receiving sales data from at least one

merchandise store via a network, cleaning the sales data and generating imputed

variables by imputing at least one missing data point (col. 4, line 5-col. 5, line 5); and

a financial engine for receiving imputed variables from the econometric engine,

receiving cost data from at least one merchandise store via the network, generating a

cost model, and outputting the cost model to the optimization engine (col. 5, line 6-col.

6, line 22). Official Notice is taken that cleansing data is old and well known in a

merge/purge document and database environment. The data is known as "dirty data"

that needs to be cleansed.

Claim 4.   Dulaney discloses, The apparatus, as recited in claim 3, wherein the

financial engine estimates inventory space in a store used by a product from the sales

data and delivery data (col. 6, line 24-col. 7, line 4). .

        Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over

(US 6,341,269) Dulaney et al, hereafter Dulaney and Official Notice in view of Alan L.

Montgomery and Peter E. Rossi, hereafter Montgomery and Rossi and further in view of

(US 5,377,095) Maeda et al, hereafter Maeda.

Claim 6.   Dulaney failed to disclose, The apparatus, as recited in claim 3, wherein

the imputed variables include at least one of a seasonality variable, a promotional

variable and a cross-elasticity variable. Montgomery and Rossi teach, wherein the

imputed variables include at least one of a seasonality variable, a promotional variable

and a cross-elasticity variable (page 414, col. 2, paragraph 2-page 415, paragraph 1). It

would have been obvious to one having ordinary skill in the art at the time the invention

was made to have the imputed variables include at least one of a seasonality variable, a promotional variable and a cross-elasticity variable and to modify in Maeda because such a modification would allow Maeda to have the basic pricing decisions and market structure analyses based on the parameters of a demand system for a group of related products and to estimate the own and cross-price elasticities for all major items in one category.

Claim 11. Dulaney discloses, The apparatus, as recited in claim 6, wherein said cost model includes fixed costs and variable costs, further wherein said variable costs are a function of the amount of sales of said product and said fixed costs are not a function of the amount of sales of said product (col. 9, lines 25-32 and lines 52-58).

Claim 12. Dulaney discloses, The apparatus, as recited in claim 11, wherein said cost model models costs for each of the at least one merchandise store. (col. 11, lines 3-38).

Claim 13. Dulaney discloses, The apparatus, as recited in claim 12, wherein said cost model models costs for individual products in said each of the at least one merchandise store for a selected demand group in a selected time period, further wherein said demand group is a group of highly substitutable products (col. 12, line 1-col. 15, line 51).

Claim 14. Dulaney failed to disclose, The apparatus, as recited in claim 13, wherein said cost model models costs as the sum of a bag cost, a location inventory cost, a checkout labor cost, a location receiving cost, a transportation cost, a distribution center inventory cost, a distribution center labor cost, an invoice processing cost, a location space cost, and a distribution center space cost. Official Notice is taken that it is old

and well known in the art of inventory, sales, and merchandising to model costs as the

sum of bag cost (number of bags needed and used), location inventory cost, checkout

labor cost (cost for persons checking out customers or employee cost), location

receiving cost, transportation cost, a distribution center inventory cost, a distribution

center labor cost, an invoice processing cost, a location space cost, and a distribution

center space cost to arrive at a cost mode and the cost of running a merchandise sales

business..

Claim 15. Dulaney failed to disclose, The apparatus, as recited in claim 13, wherein the

econometric engine is coupled to a coefficient estimator, wherein the coefficient

estimator generates a combined product sales model, a share model and a sales

model. Maeda discloses, The apparatus, as recited in claim 13, wherein the

econometric engine is coupled to a coefficient estimator, wherein the coefficient

estimator generates a combined product sales model, a share model and a sales model

(col. 10, lines 47-68). It would have been obvious to one having ordinary skill in the art

at the time the invention was made to incorporate the teachings of Maeda in Dulaney

because such an incorporation would allow Dulaney to have respective coefficients for

all functions registered in a function registration portion to be calculated on the basis of

retrieved data.

Claim 16. Dulaney discloses, The apparatus, as recited in claim 15, wherein the

coefficient estimator outputs the combined product sales model to the optimization

engine, and wherein the optimization engine generates optimized pricing for the

products from the combined product sales model and cost model (col. 18, lines 28-51).

Claim 17. Dulaney failed to disclose, The apparatus, as recited in claim 15, wherein the

coefficient estimator receives imputed variables from the econometric engine and sales

data from the at least one merchandise store. Maeda discloses, The apparatus, as

recited in claim 15, wherein the coefficient estimator receives imputed variables from

the econometric engine and sales data from the at least one merchandise store (col. 13,

lines 30-68 and col. 14, lines 45-68). It would have been obvious to one having ordinary

skill in the art at the time the invention was made to incorporate the teachings of Maeda

in Dulaney because such an incorporation would allow Dulaney to have respective

coefficients for all functions registered in a function registration portion to be calculated

on the basis of retrieved data.

Claim 18. Dulaney discloses, The apparatus, as recited in claim 17, wherein the

combined product sales model is given by:

where,

k = a product

i = a primary demand group

t = a time period

Di, k,t = a demand for product k in demand group i in time period t

F~,k,, = a fraction of the demand group i equivalent sales comprised by the product k

in the time period t

S,,, = an equivalent sales of the demand group i in the period t (col. 12, line 11- col. 15,

line 58 and col. 16, line 16- col. 18, line 40).

Claim 19. Dulaney discloses, The apparatus, as recited in claim 17, wherein the sales

model is given by:

where,

k = the product i -- the primary demand group j -- a secondary demand group t = the

time period

B = a baseline state of product

$S_{,,}$ = the equivalent sales of the demand group i in the period t

$SB_{,,}$-- an equivalent baseline sales of the demand group i in the period t $TS_{,}$ = total

sales for the merchandise store in the period t $TS_{-,}$ = total sales for a region in the

period t

$P_{,,}$ -- an equivalent price of the demand group i in the time period t

$\sim_{,,}$ = an average equivalent price of the demand group i for the time period t

$P_{,,}$ = an average competitor equivalent price of the demand group i for the time

period t

$Mi_{,,}$ = a promotion level for the demand group i in the time period t

$Xi_{,,}$ = a seasonality index for the demand group i in the time period t

$7\sim$ = a price elasticity factor for the demand group i

$v\sim$ = a promotion factor for the demand group i

$\sim t\sim$ = a seasonality factor for the demand group i

= a seasonality-price interaction factor that measures the interaction of weighted

average price deviations and seasonality for the demand group i

n = a number of time periods away from the time period t

$S\sim,n$ = a time lag factor for the demand group i and the delay of n weeks

$\sim$bi,j = a cross elasticity factor for the demand group i and the demand group j

q$\sim$,, = a competitive price factor for the demand group i measured with respect to the

difference between the weighted average price of the demand group within the

merchandise

store and outside competitors

a-$\sim$ = a traffic factor for the demand group i

0$\sim$ = a day-of-week effect for the demand group i

^{2}

cr = a mean square error of the sales model divided by 2

K$\sim$ = a constant associated with the demand group I (col. 12, line 11- col. 15, line 58

and col. 16, line 16- col. 18, line 40).

Claim 20. Dulaney disclose, The apparatus, as recited in claim 17, wherein the

share model is given by:

where:

k = the product

i = the primary demand group

t = the time period

n = the number of time periods away from the time period t

F,,k,, = the fraction of the demand group i equivalent sales comprised by the product k

in the time period t

P$\sim$i,k,t = an equivalent base price of the product k in the demand group i in the time

period t

$\sim i,(k\sim,t$ = an average equivalent base price of all products other than the product k in the demand group i for the time period t

PRB$\sim$,k,t = a relative equivalent base price of the product k in the demand group i for the time period t

$\sim$Bz,o,t = an average relative equivalent base price in the demand group i for the time period t

Mp,$\sim$,k,, = a level of promotion typep for the product k in the demand group i in the time period t

P$\sim$,k = a relative base price elasticity factor for the product k in the demand group i

o-p,i,k = a promotion factorp for the product k in the demand group i

Z$\sim$,k,n = a time lag factor for the product k in the demand group i and the delay of n

A$\sim$,k = a constant associated with the product k in the demand group I (col. 12, line 11- col. 15, line 58 and col. 16, line 16- col. 18, line 40).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Morgan et al (US 5,799,286) disclosed an activity -based management system.

Phillips et al (US 2002/0116348) disclosed a dynamic pricing system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ella Colbert whose telephone number is 571-272-6741.

The examiner can normally be reached on Monday, Tuesday, and Thursday, 5:30AM-
3:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Dixon Thomas can be reached on 571-272-6803. The fax phone number
for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov.
Should you have questions on access to the Private PAIR system, contact the
Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like
assistance from a USPTO Customer Service Representative or access to the
automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-
1000.

March 3, 2008

/Ella Colbert/

Primary Examiner, Art Unit 3696

Request for Information Under 37 CFR 1.105

Applicant and the assignee of this application are required under 37 CFR 1.105 to provide the following information that the Examiner has determined is reasonably necessary to the examination of this application. In response to this requirement, please state the specific improvements of the subject matter in claims 3, 4, 6, and 11-20 over the disclosed prior art and indicate the specific elements in the claimed subject matter that provide those improvements. The information requested of the inventor and the assignee as per MPEP §704.10 and 37 CFR 1.105 (a)(1) is as follows:

Where the mathematical formulas can be found. If the mathematical formulas for claims 18-20 were taken from a book, article, or other material. Applicants' are requested to provide copies of the source. If the mathematical formulas are the Applicants' own formulas, evidence needs to be provided that these are the Applicants' own mathematical formulas for a product sales mode, a sales model, and a share model.

In responding to those requirements that require copies of documents, where the document is a bound text or a single article over 50 pages, the requirement may be met by providing copies of those pages that provide the particular subject matter indicated in the requirement, or where such subject matter is not indicated, the subject matter found in applicant's disclosure.

This requirement is an attachment of the enclosed Office action. A complete reply to the enclosed Office action must include a complete reply to this requirement.

The time period for reply to this requirement coincides with the time period for reply to

the enclosed Office action.

Inquiries

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examiner should be directed to Ella Colbert whose telephone number is 571-272-6741.

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/Ella Colbert/
Primary Examiner, Art Unit 3696

March 3, 2008